

Serial No.: 10/827,206

Examiner: G. Verbitsky

Title: INFRARED THERMOGRAPHY IMAGING SYSTEM WITH ACTIVELY QUENCHED LAMP

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**Amendments to the Drawings:**

The attached drawing sheet includes changes to Figure 9. This sheet, which includes Figure 9, replaces the original sheet including Figure 9. In Figure 9, reference character 30 has been added to correspond with reference character 30 enumerated in the specification.

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**REMARKS/ARGUMENTS**

Reconsideration is requested in view of the following remarks. The specification was editorially revised to correct informalities without adding new subject matter. Figure 9 was amended to include inadvertently omitted reference character --30--. Claims 15-22, 28 and 30 remain under consideration in the present application.

**Claim Rejections – 35 USC §103**

Claims 15-20 and 30 are rejected under 35 U.S.C. §103(a) as unpatentable over Front-Flash Thermal Imaging Characterization of Continuous Fiber Ceramic Composites article by Deemer et al., Jan. 25, 2999 (Article 1) in view of Erhardt (US Pat Pub 20020180384/US 6,583,588). Applicants respectfully traverse this rejection.

Claim 15 is directed to an infrared thermograph imaging system that includes at least one active quenching means configured to quench at least one flash lamp to control the duration of a flash. The duration of the flash is controlled, as described in paragraph 25 the specification, to control the amount of heat transferred to an object from the flash lamp. Without the ability to control the duration of a flash, the heat transferred to the object from the flash lamp would continue to heat the object during data acquisition, thereby distorting the thermal information in heat measurement camera data frames.

The rejection asserts that it would have been obvious to one of ordinary skill in the art to add a control device, as taught by Erhardt, to the device of Article 1, so as to have a cyclic heating and cooling control of the illuminating means (lamp), so as to prevent lamp overheating.

In contradistinction, the invention of claim 15 has nothing whatsoever to do with controlling lamp overheating. As described above, claim 15 is concerned only with controlling the duration of a flash to control the amount of heat transferred to an object from the flash lamp. In fact, adding a control device, as taught by Erhardt, to prevent lamp overheating, may actually result in underheating or overheating the object to be measured, since the duration of the flash from the flash lamp is likely to be improperly controlled, thereby distorting the thermal information in heat measurement camera data frames.

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Neither Article 1 nor Erhardt disclose or suggest an infrared thermograph imaging system that includes at least one active quenching means configured to quench at least one flash lamp to control the duration of a flash. Thus, there is no motivation to combine the references. Further, even if the reference are combined, the teachings together neither disclose nor suggest an infrared thermograph imaging system that includes at least one active quenching means configured to quench at least one flash lamp to control the duration of a flash as claimed in claim 15.

For at least these reasons, claim 15 is patentable over Article 1, alone or in combination with Erhardt. Claims 16-20 are also patentable since they depend ultimately from claim 15 that is allowable. Erhardt does not remedy the deficiencies of Article 1.

The features of claim 30 correspond with the features of claim 15; and so claim 30 is patentable over the cited art, alone or in combination, for the same reasons discussed above regarding the rejection of claim 15. Applicants do not concede the correctness of the rejections.

Claim 15 is rejected under 35 U.S.C. §103(a) as unpatentable over Article 1 in view of Narita (US 6,759,793). Applicants respectfully traverse this rejection.

The rejection admits Narita teaches in Fig. 2 to cool an illuminating lamp by actively quenching the lamp by providing cooling means, inherently controlled by a cooling (quench) control signal. As described above, the invention of claim 15 has nothing whatsoever to do with controlling lamp overheating. As described above, the invention of claim 15 is concerned only with controlling the duration of a flash to control the amount of heat transferred to an object from the flash lamp. In fact, adding a control signal, as taught by Narita, to prevent lamp overheating, may actually result in underheating or overheating the object to be measured, since the duration of the flash from the flash lamp is likely to be improperly controlled, thereby distorting the thermal information in heat measurement camera data frames. The invention of claim 15 is directed to accurately controlling heat transfer to an object to be measured. The invention of Narita is directed to controlling lamp overheating.

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Neither Article 1 nor Narita disclose or suggest an infrared thermograph imaging system that includes at least one active quenching means configured to quench at least one flash lamp to control the duration of a flash. Thus, there is no motivation to combine the references. Further, even if the reference are combined, the teachings together neither disclose nor suggest an infrared thermograph imaging system that includes at least one active quenching means configured to quench at least one flash lamp to control the duration of a flash as claimed in claim 15.

For at least these reasons, claim 15 is patentable over Article 1, alone or in combination with Narita. Narita does not remedy the deficiencies of Article 1. Applicants do not concede the correctness of the rejection.

Claims 21-22 and 28 are rejected under 35 U.S.C. §103(a) as unpatentable over Article 1 and Erhardt in view of Integrated Gate-Commutated Thyristors article by Carroll et al. (Article 2). Applicants respectfully traverse this rejection for at least the same reasons discussed above regarding the rejection of claim 15, since claims 21-22 and 28 depend ultimately from claim 15. For at least these reasons, claims 21-22 and 28 are patentable since they depend ultimately from claim 15 that is allowable. Article 2 does not remedy the deficiencies of Article 1 and Erhardt. Applicants do not concede the correctness of the rejection as applied to the remaining features of claims 21-22 and 28.

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Favorable reconsideration in the form of a Notice of Allowance is requested. If the Examiner believes a telephone conference would advance the prosecution of this application, the Examiner is invited to telephone the undersigned at (507) 351-4450.

**006147**

PATENT TRADEMARK OFFICE

Respectfully submitted,

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